

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No.: 10/540,514
Attorney Docket No: Q88664

REMARKS

Upon entry of the amendment, Claims 1-8 are all the claims pending in the application.

Claim 5 has been amended so that it is in independent form.

Claims 6-8 are new. The new claims were added in view of the amendment to Claim 5.

Therefore, no new matter has been added.

I. Claim Objections

Claim 5 has been objected to, as allegedly being in incorrect dependent form.

Applicants have amended Claim 5 so that Claim 5 is in independent form. Claims 6 to 8 have been added to depend from Claim 5. Each of Claims 6 and 8 depend from Claim 5. Claim 7 depends from Claim 6. Therefore, Claims 5-8 are in correct dependent form.

Reconsideration and withdrawal are respectfully requested.

II. Claim Rejections - 35 U.S.C. § 102

Claims 1-5 have been rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent No. 6,639,254 to Mukai et al. (“Mukai ‘254”).

Applicants respectfully traverse this rejection.

Claims 1 and 5 recite an AlGaAs layer containing n-type impurities as an electron supplying layer. Figure 1 of Mukai ‘254 is a sketch of a semiconductor device thereof. *See*, col. 3, line 66 to col. 4, line 1. Mukai ‘254 does not describe that the semiconductor device shown in Figure 1 thereof includes an AlGaAs layer containing n-type impurities as an electron supplying layer. Mukai ‘254 discloses that the semiconductor device shown in Figure 1 has a GaAs substrate 10, a GaAs buffer layer 1, a micro structure 2 made of InGaAs, a spacer layer 3 of

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No.: 10/540,514
Attorney Docket No: Q88664

GaAs, and a strained layer 4 of $In_xGa_{1-x}As$. *See*, col. 5, line 66 to col. 6, line 68. Each of these are different from an electron supplying layer of an AlGaAs layer containing n-type impurities. In this regard, Mukai '254 does not describe the compound semiconductor epitaxial substrates recited in Claims 1 and 5.

Further, Mukai '254 fails to describe an InGaAs layer that has an emission peak wavelength at 77 K of 1030 nm or more. As described above, Mukai '254 discloses that Figure 1 shows that the semiconductor layer thereof contains "a strained layer 4 of $In_xGa_{1-x}As$." *See*, col. 4, lines 36-38. Mukai '254 discloses that Figure 2 is a graph showing the relation between a photoluminescence wavelength and a film thickness of an $In_xGa_{1-x}As$ for four samples of the semiconductor device shown in Figure 1. *See*, col. 5, lines 10-14. In stark contrast, Mukai '254 discloses that Figure 3 thereof shows a semiconductor laser in which active layer 24 is made of InGaAs. The semiconductor laser disclosed in Figure 3 is not a transistor. The active layer 24 thereof and strained layer 4 thereof are different. In this regard, Figure 2 thereof does not describe the active layer 24 shown in Figure 3 as having an emission peak wavelength at 77 K of 1030 nm or more.

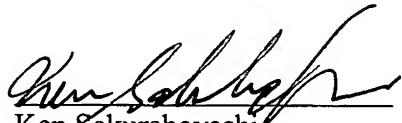
Claims 2-4 and 6-8 depend directly or indirectly from Claim 1 or 5. Therefore, Claims 2-4 and 6-8 are patentable for at least the same reasons as Claims 1 and 5.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No.: 10/540,514
Attorney Docket No: Q88664

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Ken Sakurabayashi
Registration No. 58,490

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

Date: June 28, 2006